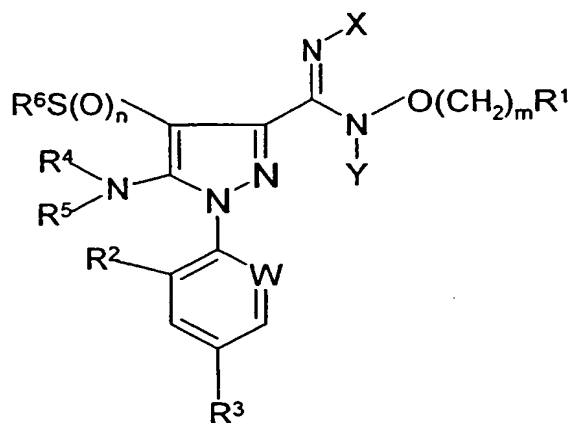
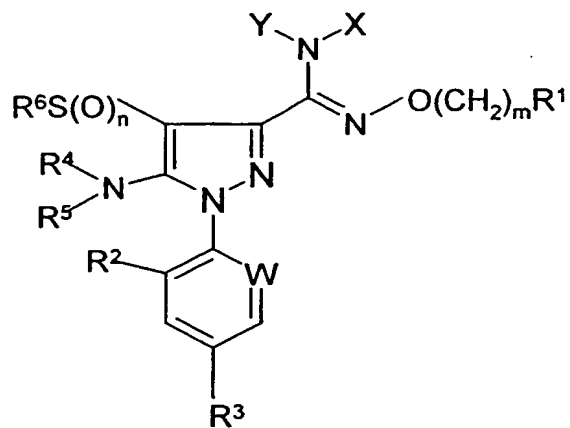


CLAIMS

1. A compound of formula (Ia) or (Ib):



(Ia)



(Ib)

wherein:

R^1 is aryl unsubstituted or substituted by one or more R^{15} radicals; or is R^{10} or R^{19} ;
 X and Y are each independently H, (C_3-C_6) -alkenyl, (C_3-C_6) -haloalkenyl, (C_3-C_6) -alkynyl, (C_3-C_6) -haloalkynyl, (C_3-C_7) -cycloalkyl, $-(C_1-C_4)$ -alkyl- (C_3-C_7) -cycloalkyl, $-CO_2-(C_1-C_6)$ -alkyl, $CONR^7R^8$, $CONR^8R^9$, $-CO_2-(CH_2)_qR^7$, $-(CH_2)_qR^7$, $-(CH_2)_qR^{10}$, COR^8 , SO_2R^{13} or COR^{17} ; or (C_1-C_6) -alkyl unsubstituted or substituted by one or more R^{11} radicals;

W is N, C- CH_3 or C-halogen;

R^2 is hydrogen, CH_3 or halogen;

R^3 is halo, (C_1-C_3) -alkyl, (C_1-C_3) -haloalkyl, (C_1-C_3) -haloalkoxy, $S(O)_p-(C_1-C_3)$ -haloalkyl or SF_5 ;

R^4 is H, (C_3-C_6) -alkenyl, (C_3-C_6) -haloalkenyl, (C_3-C_6) -alkynyl, (C_3-C_6) -haloalkynyl, (C_3-C_7) -cycloalkyl, $-CO_2-(C_1-C_6)$ -alkyl, $-CO_2-(C_3-C_7)$ -cycloalkyl, $-CO_2-(C_1-C_4)$ -alkyl- (C_3-C_7) -cycloalkyl, $-CO_2-(C_3-C_6)$ -alkenyl, $-CO_2-(CH_2)_qR^7$, $CONR^8R^9$, $-CO_2-(CH_2)_qR^{10}$, $-(CH_2)_qR^7$, $-(CH_2)_qR^{10}$, COR^8 or $COCH_2O-(C_1-C_4)$ -alkyl; or (C_1-C_6) -alkyl unsubstituted or substituted by one or more R^{11} radicals;

R^5 is H, (C_2-C_6) -alkynyl, $-CO_2-(C_1-C_6)$ -alkyl, (C_3-C_7) -cycloalkyl or $-SO_2R^{12}$; or (C_1-C_6) -alkyl, (C_2-C_6) -alkenyl or $CO-(C_1-C_6)$ -alkyl which last three mentioned groups are unsubstituted or substituted by one or more R^{11} radicals;

R^6 and R^{13} are each independently (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-haloalkenyl, (C₂-C₆)-alkynyl, (C₂-C₆)-haloalkynyl or (C₃-C₇)-cycloalkyl;

R^7 is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-haloalkoxy, CN, NO₂, S(O)_pR¹³ and NR⁹R¹⁴;

R^8 is H, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₃-C₇)-cycloalkyl, -(C₁-C₄)-alkyl-(C₃-C₇)-cycloalkyl, -(CH₂)_qR⁷ or -(CH₂)_qR¹⁰;

R^9 and R^{14} are each independently H, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₃-C₇)-cycloalkyl or -(C₁-C₄)-alkyl-(C₃-C₇)-cycloalkyl; or

R^8 and R^9 together with the attached N atom form a five- or six-membered saturated ring which optionally contains an additional hetero atom in the ring which is selected from O, S and N, the ring being unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl and halogen;

R^{10} is heterocyclyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₁-C₄)-alkoxy, S(O)_pR¹³, OH and oxo;

R^{11} is halogen, (C₁-C₆)-alkoxy, (C₁-C₆)-haloalkoxy, (C₃-C₇)-cycloalkyl, S(O)_pR¹³, -CO₂-(C₁-C₆)-alkyl, -O(C=O)-(C₁-C₆)-alkyl, CO-(C₁-C₆)-alkyl, CO-(C₁-C₆)-haloalkyl, NR⁸R⁹, CONR⁸R⁹, SO₂NR⁸R⁹, OH, CN, NO₂, OR⁷, NR⁸COR¹⁴, NR⁸SO₂R¹³ or OR¹⁰;

R^{12} is (C₃-C₇)-cycloalkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-haloalkenyl or R¹⁰; or phenyl unsubstituted or substituted by one or more radicals selected from R¹⁵; or is (C₁-C₆)-alkyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkoxy, (C₁-C₆)-haloalkoxy, (C₃-C₆)-alkenyloxy, (C₃-C₆)-haloalkenyloxy, (C₃-C₆)-alkynyloxy, (C₃-C₆)-haloalkynyloxy, (C₃-C₇)-cycloalkyl, S(O)_pR⁷, S(O)_pR¹⁰, S(O)_pR¹³, CN, NO₂, OH, COR⁸, NR⁸COR¹⁴, NR⁸SO₂R¹³, CONR⁸R⁹, NR⁸R⁹, OR⁷, OR¹⁰, R¹⁶, R¹⁰ and CO₂R⁸;

R^{15} is halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-haloalkoxy, CN, NO₂, S(O)_pR¹³, NR⁸R⁹, COR¹³, COR⁷, CONR⁸R⁹, SO₂NR⁸R⁹, R⁷, SF₅, OH, OR⁷, R¹⁸, OR¹⁸, SO₃H or (C₁-C₆)-alkylideneimino;

R^{16} is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-

haloalkoxy, CN, NO₂, S(O)_pR¹³, NR⁸R⁹, COR¹³, COR⁷, CONR⁸R⁹, SO₂NR⁸R⁹, OH, SO₃H and (C₁-C₆)-alkylideneimino;

R¹⁷ is (C₁-C₆)-alkyl which is substituted by (C₁-C₆)-alkoxy, S(O)_p-(C₁-C₆)-alkyl or S(O)_p-(C₁-C₆)-haloalkyl;

R¹⁸ is a heteroaromatic radical selected from the group consisting of pyridyl, pyrimidinyl, pyridazinyl, pyrazinyl, triazinyl, thienyl, thiazolyl, thiadiazolyl, oxazolyl, isoxazolyl, furyl, pyrrolyl, pyrazolyl, imidazolyl and triazolyl, which groups are unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl and (C₁-C₆)-alkoxy;

R¹⁹ is a heteroaromatic radical selected from the group consisting of pyridyl, pyrimidinyl, pyridazinyl, pyrazinyl, triazinyl, thienyl, thiazolyl, thiadiazolyl, oxazolyl, isoxazolyl, furyl, pyrrolyl, pyrazolyl, imidazolyl and triazolyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl and (C₁-C₆)-alkoxy, and which heteroaromatic radical is substituted by R⁷, R¹⁸ or OR⁷;

m is 1 or 2;

n and p are each independently zero, one or two;

q is zero or one; and

each heterocyclyl in the above-mentioned radicals is independently a heterocyclic radical having 3 to 6 ring atoms and 1, 2 or 3 hetero atoms in the ring selected from the group consisting of N, O and S;
or a pesticidally acceptable salt thereof.

2. A compound or a salt thereof as claimed in claim 1 wherein R¹ is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)-alkyl, (C₁-C₆)-haloalkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-haloalkoxy, CN, NO₂, S(O)_pR¹³, NR⁸R⁹, COR¹³ and CONR⁸R⁹; and in which R⁸ and R⁹ are each independently H or (C₁-C₆)-alkyl, or R⁸ and R⁹ together with the attached N atom form a five- or six-membered saturated ring which optionally contains an additional hetero atom in the ring which is selected from O, S and N, the ring being unsubstituted or substituted by one or more (C₁-C₃)-alkyl radicals; and R¹³ is (C₁-C₃)-alkyl or (C₁-C₃)-haloalkyl.

3. A compound or a salt thereof as claimed in claim 1 or 2 wherein X and Y are each independently H, (C₁-C₆)-alkyl or CO(C₁-C₆)-alkyl.
4. A compound or a salt thereof as claimed in claim 1, 2 or 3 wherein W is C-Cl.
5. A compound or a salt thereof as claimed in any one of claims 1 to 4 wherein R² is Cl.
6. A compound or a salt thereof as claimed in any one of claims 1 to 5 wherein R³ is CF₃.
7. A compound or a salt thereof as claimed in any one of claims 1 to 6 wherein R⁴ is H, (C₁-C₆)-alkyl, (C₃-C₆)-alkenyl, (C₃-C₆)-alkynyl, (C₃-C₇)-cycloalkyl, -CO₂-(C₁-C₆)-alkyl, -(C₁-C₆)-alkyl-(C₃-C₇)-cycloalkyl, COCH₂O(C₁-C₄)-alkyl, -(C₁-C₆)-alkyl-S(O)_p-(C₁-C₆)-alkyl or -CH₂R⁷, in which R⁷ is phenyl unsubstituted or substituted by one or more radicals selected from halogen, (C₁-C₃)-alkyl, (C₁-C₃)-haloalkyl, (C₁-C₃)-alkoxy, (C₁-C₃)-haloalkoxy, CN, NO₂ and S(O)_pR¹³, and R¹³ is (C₁-C₃)-alkyl or (C₁-C₃)-haloalkyl.
8. A compound or a salt thereof as claimed in any one of claims 1 to 7 wherein R⁵ is H, (C₁-C₆)-alkyl, (C₃-C₆)-alkenyl, (C₃-C₆)-alkynyl, (C₃-C₇)-cycloalkyl, -CO₂-(C₁-C₆)-alkyl or -(C₁-C₆)-alkyl-(C₃-C₇)-cycloalkyl.
9. A compound or a salt thereof as claimed in any one of claims 1 to 8 wherein R⁶ is CF₃.
10. A compound or a salt thereof as claimed in any one of claims 1 to 9 wherein m is 1.
11. A compound or a salt thereof as claimed in any one of claims 1 to 10 wherein R¹ is phenyl;

X and Y are each independently H, methyl or acetyl;

W is C-Cl;

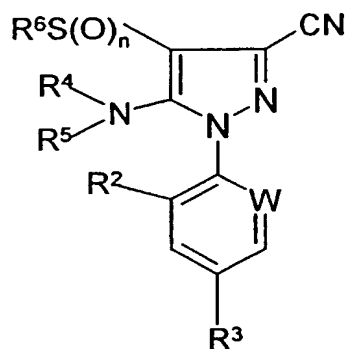
R² is Cl;

R³ and R⁶ are each CF₃;

R⁴ and R⁵ are each independently H, methyl, ethyl, allyl, propargyl, cyclopropyl, benzyl, cyclopropylmethyl, methylthioethyl, ethoxyacetyl or ethoxycarbonyl; and m is 1.

12. A process for the preparation of a compound of formula (I) or a salt thereof as defined in any one of claims 1 to 11, which process comprises:

a) where (I) is a formula (Ia), X is H, m and R¹ are as defined in claim 1, Y is as defined in claim 1 with the exclusion of H, and the other symbols are as defined in claim 1, reacting a compound of formula (II):



(II)

wherein R², R³, R⁴, R⁵, R⁶, W and n are as defined in claim 1, with a compound of formula (III):

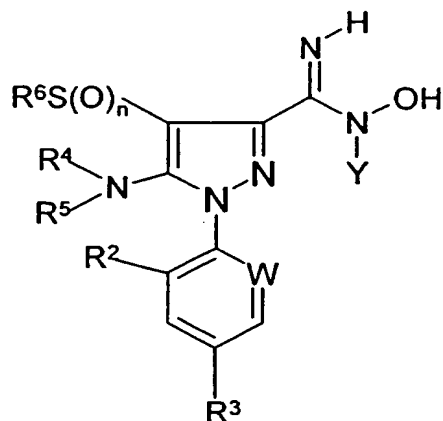


(III)

wherein R¹ and m are as defined in claim 1 and Y is as defined in claim 1 with the exclusion of H; or

b) where (I) is a formula (Ia), X is H, m and R¹ are as defined in claim 1, Y is as defined in claim 1 with the exclusion of H, and the other symbols are as defined in claim 1, reacting a compound of formula (IV):

74



(IV)

wherein the various symbols are as defined in claim 1, with a compound of formula (V):



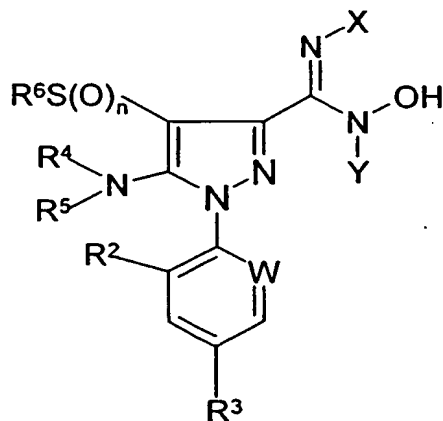
wherein R^1 and m are as defined in claim 1 and L is a leaving group; or

c) where (I) is a formula (Ia), X is as defined in claim 1 with the exclusion of H , and the other symbols are as defined in claim 1, the alkylation, acylation or sulfonylation of the corresponding compound of formula (Ia) wherein X is H , using a compound of formula (VI):



wherein X is as defined in claim 1 with the exclusion of H and L^1 is a leaving group; or

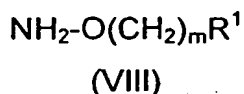
d) where (I) is a formula (Ia), X , Y and the other symbols are as defined in claim 1, the reaction of a compound of formula (VII):



(VII)

wherein the various symbols are as defined in claim 1, with a compound of formula (V) as defined above; or

e) where (I) is a formula (Ib), X and Y are each H, and m, R¹ and the other symbols are as defined in claim 1, the reaction of a compound of formula (II) as defined in claim 1, with a compound of formula (VIII):



wherein R¹ and m are as defined in claim 1; or

f) where (I) is a formula (Ib), X is H, Y is as defined in claim 1 with the exclusion of H, and the other symbols are as defined in claim 1, the alkylation, acylation or sulfonylation of the corresponding compound of formula (Ib) wherein Y is H, using a compound of formula (IX):



wherein Y is as defined in claim 1 with the exclusion of H and L² is a leaving group; or

g) where (I) is a formula (Ib), X and Y are as defined in claim 1 with the exclusion of H, and the other symbols are as defined in claim 1, the alkylation, acylation or sulfonylation of the corresponding compound of formula (Ib) wherein X is H, using a compound of formula (VI) as defined in claim 1; or

h) where R¹, R², R³, R⁴, R⁵, R⁶, W, X, Y and m are as defined in claim 1, and n is 1 or 2, oxidising a corresponding compound in which n is 0 or 1; and

i) if desired, converting a resulting compound of formula (I) into a pesticidally acceptable salt thereof.

13. A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in any one of claims 1 to 11, in association with a pesticidally acceptable diluent or carrier and/or surface active agent.

14. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 11 or of a composition according to claim 13, for the preparation of a veterinary medicament.

15. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 11 or of a composition according to claim 13, for the preparation of a veterinary medicament for controlling pests.

16. A method for the control of pests at a locus which comprises the application of an effective amount of a compound of formula (I) or a salt thereof as claimed in any of claims 1 to 11 or of a composition as claimed in claim 13.